

ABSTRACT OF THE DISCLOSURE

An apparatus and method for identifying a chemical compound. A neutron source delivers neutrons into the
5 chemical compound. The nuclei of chemical elements constituting the chemical compound emit gamma rays upon interaction with the neutrons. The gamma rays are characteristic of the chemical elements constituting the chemical compound. A spectrum of the gamma rays is
10 generated having a detection count and an energy scale. The energy scale is calibrated by comparing peaks in the spectrum to energies of pre-selected chemical elements in the spectrum. A least-squares fit completes the calibration. The chemical elements constituting the
15 chemical compound can be readily determined, which then allows for identification of the chemical compound.